

ENVIRONMENTAL HEALTH

July, 2004
Fact Sheet

LaFarge Corporation, Seattle, Washington

Health Consultation Completed

The Washington State Department of Health (DOH) in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR) has completed an evaluation of the potential human health risks associated with air emissions from the Lafarge Corporation cement plant in Seattle, Washington.

Site Background

Lafarge is located in the Duwamish valley at 5400 West Marginal Way SW in Seattle, Washington. The 25-acre site is bordered by the Duwamish River to the north and east, West Marginal Way to the west, and commercial/industrial properties to the south.



Lafarge Corporation site in Seattle, Washington.

The cement is made by mixing limestone, sand, clay, iron, and other materials at high temperatures to form clinker. The clinker is ground with gypsum to form Portland cement. Lafarge uses coal to fire its cement kiln that operates 24-hours-per-day, 7-days-per-week. The kiln is usually shut down for maintenance a couple of weeks per year. Other shut downs may occur for unscheduled maintenance or when market conditions are not favorable for cement production.

How You Can Help

The squeaky wheel gets the grease. Until the odor problem is resolved, please continue to log your odor complaints with the Puget Sound Clean Air Agency.

If you experience an offensive odor that is distinct, definite, and lasting at your home or office, contact the **Puget Sound Clean Air Agency**:

(206) 343-8800 or (800) 552-3565

E-mail: inspection@pscleanair.org

Please include:

- your name
- your daytime phone number
- the date, time, and address where you notice the odor

Lafarge is required to comply with a number of laws and regulations, including the Federal Mine Safety and Health Act, Clean Air Act, Clean Water Act, and the Resource Conservation and Recovery Act. Lafarge's air emissions are regulated by the Puget Sound Clean Air Agency (Clean Air).

The Odor

South Seattle residents began reporting an odor throughout their neighborhood in the spring of 2001. Descriptions such as "chlorine-like," "acidic," and "caustic" have been used to describe the odor. Some odor complaints were accompanied by reports of affected breathing. Clean Air received complaints from the South Park and Georgetown neighborhoods, West Seattle, Beacon Hill, and Highland Park. Teachers and students at Highland Park

Elementary School repeatedly reported odors. Clean Air investigated the source of the odors by looking at various industries and utilities that used or stored chlorine or chlorine-like compounds. This search was inconclusive.

Lafarge was identified as a potential contributor to the odor because:

- People sometimes noticed a plume from Lafarge's stack touching down when they smelled the odor.
- The wind was usually blowing from Lafarge's direction at times odors were reported.
- Odors were reported on weekends and only a few industries, including LaFarge, operate 7 days per week.
- Complaints nearly ceased at times when Lafarge's kiln was shut down for maintenance.

Clean Air requested that Lafarge study their operation to determine if there is something in their process that might be contributing to odors. Lafarge is currently working with Clean Air on ways to reduce emissions.

Contaminants of Concern

Lafarge emits a variety of combustion gases from its 250 ft tall stack including, carbon dioxide, carbon monoxide, nitrogen oxides, and sulphur dioxide. The primary contaminants of concern for public health are nitrogen oxides because Lafarge occasionally emits high levels of these gases. Most of the time, nitrogen oxides and other pollutants are dispersed into the atmosphere without directly impacting the local area. Occasionally weather conditions cause the plume to reach ground level before it disperses. During these events, nitrogen oxides can noticeably impact nearby residents.

Other sources of nitrogen oxides emissions are combustion processes such as fossil fuel power stations, motor vehicles and furnaces. In most urban areas, automobiles are the largest producer of nitrogen oxides. Low levels of nitrogen oxides in the air can irritate eyes, nose, throat, and lungs. Symptoms can include a cough, shortness of breath, tiredness, and nausea. People with respiratory illnesses like asthma, or emphysema may be susceptible to nitrogen oxides at levels typically found in urban air.

Air Monitoring

Currently, the only active nitrogen oxides monitoring station near the Duwamish valley is located at the top of Beacon Hill. Another monitor was located in Georgetown until 2002. The Georgetown air monitor appeared to indicate that nitrogen oxides were primarily associated with heavy traffic on Interstate 5 as opposed to industrial sources in the Duwamish valley. The majority of complaints come from South Park and Highland Park. Data from air monitoring stations at Georgetown and Beacon Hill may not be representative of these areas due to differences in prevailing winds, climatology, elevation, and local geography.

Multiple Sources

Lafarge is located in an area that has a mixture of residential and industrial land use. Clean Air records show at least 210 businesses are registered as active sources of air pollution in the Duwamish Valley. In areas where industrial and residential land uses are commingled, multiple sources of air pollutants exist and must be considered together.

Conclusions & Recommendations

1. **More air monitoring is needed to determine if there is a health risk from exposure to air emissions from the Lafarge facility.**
2. Nitrogen oxide air monitors need to be installed at Highland Park and South Park.
3. An assessment of multiple air pollution sources in the Duwamish valley is necessary to determine health impacts from industrial and vehicle emissions in south Seattle.

Public Health Action Plan

1. Clean Air has purchased air monitors to be installed at locations in South Park and Highland Park during the summer of 2004. These monitors will have the ability to measure nitrogen oxides and sulphur dioxide levels several times per minute.
2. DOH will evaluate data generated by the air monitors to determine health impacts.

3. DOH will evaluate the feasibility of conducting an area-wide assessment of south Seattle that focuses on the health impacts related to multiple sources of air emissions.

For a free copy of the health consultation, call or e-mail:

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Please see the following websites for more information:

Puget Sound Clean Air Agency
<http://www.pscleanair.org/>

Clear the Air (citizens' group)
<http://www.cleartheairseattle.org/>

